

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: D. Ogata et al. : Art Unit:  
Serial No.: To Be Assigned : Examiner:  
Filed: Herewith :  
FOR: OPTICAL RECORDING :  
APPARATUS, OPTICAL RECORDING :  
METHOD, PROGRAM AND MEDIUM :

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents  
Washington, D.C. 20231

S I R :

Prior to examination, please amend the above-identified application  
as follows:

SPECIFICATION:

Specification at page 5, line 11:

One aspect of the present invention is an optical recording  
apparatus comprising:

Specification at page 5, line 20:

Another aspect of the present invention is an optical recording  
apparatus, wherein said detection means detects the detected aberration amount  
as an aberration detection signal  $S$ , and wherein said control means controls the  
output of the light source so that, when the output of the light source necessary  
for the recording under a condition where  $S=0$  is  $P_0$ , the output is  $P_0/(1-K \cdot S^2)$   
for a predetermined constant  $K$ .

Specification at page 6, line 3:

Still another aspect of the present invention is an optical recording apparatus, wherein said aberration amount is substantially a spherical aberration amount and/or a coma aberration amount.

Specification at page 6, line 7:

Yet still another aspect of the present invention is an optical recording apparatus, wherein said detection means is capable of detecting the spherical aberration amount and the coma aberration amount, and outputs the spherical aberration amount as a spherical aberration detection signal  $S_1$  and outputs the coma aberration amount as a coma aberration detection signal  $S_2$ , and wherein said control means controls the output of the light source so that, when the output of the light source necessary for the recording under a condition where  $S_1 = S_2 = 0$  is  $P_0$ , the output is  $P_0 / (1 - K \cdot (S_1^2 + S_2^2))$  for a predetermined constant  $K$ .

Specification at page 6, line 18:

Still yet another aspect of the present invention is an optical recording apparatus, wherein said information recording is performed on an optical disk, wherein said detection means detects and outputs a tilt amount of the optical disk as the signal associated with the aberration amount, and wherein the coma aberration amount is calculated based on a predetermined relationship that holds between the coma aberration amount and the tilt amount.

Specification at page 7, line 1:

A further aspect of the present invention is an optical recording apparatus, wherein said information recording is stopped when  $1 / (1 - K \cdot S^2) > 1.5$ .

Specification at page 7, line 4:

A still further aspect of the present invention is an optical recording apparatus, wherein said detection means detects the detected aberration amount as an aberration detection signal  $S$ , and wherein when the aberration detection signal and the output of the light source obtained by initial learning in the recording are  $S_i$  and  $P_i$ , respectively, said control means controls the output of the light source so that the output is  $P_i(1-K \cdot S_i^2)/(1-K \cdot S^2)$  for a predetermined constant  $K$ .

Specification at page 7, line 13:

A yet further aspect of the present invention is an optical recording method of controlling a light source for generating a light spot used for information recording, said method comprising:

Specification at page 7, line 22:

A still yet further aspect of the present invention is a program for causing a computer to function as all or part of the control means of the optical recording apparatus.

Specification at page 8, line 1:

An additional aspect of the present invention is a program for causing a computer to perform all or part of the control step of the optical recording method.

Specification at page 8, line 4:

A still additional aspect of the present invention is a medium carrying a program for causing a computer to function as all or part of the

control means of the optical recording apparatus, said medium being computer-processable.

Specification at page 8, line 9:

A yet additional aspect of the present invention is a medium carrying a program for causing a computer to perform all or part of the control step of the optical recording method, said medium being computer-processable.

Respectfully Submitted,

  
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Allan Ratner, Reg. No. 19,717  
Attorney for Applicants

AR/dlm

Enclosure: Version with markings to show changes made

Dated: October 30, 2001

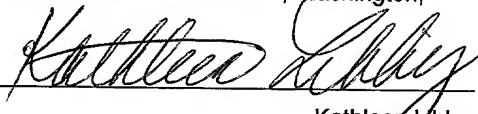
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Date of Deposit: October 30, 2001

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\_\_\_\_\_  
Kathleen Libby

## VERSION WITH MARKINGS TO SHOW CHANGES MADE

SPECIFICATION:

Specification at page 5, line 11:

~~The 1st invention~~ One aspect of the present invention is an optical recording apparatus comprising:

Specification at page 5, line 20:

~~The 2nd invention~~ Another aspect of the present invention is an optical recording apparatus ~~according to 1st invention~~, wherein said detection means detects the detected aberration amount as an aberration detection signal S, and wherein said control means controls the output of the light source so that, when the output of the light source necessary for the recording under a condition where  $S=0$  is  $P_0$ , the output is  $P_0/(1-K \cdot S^2)$  for a predetermined constant K.

Specification at page 6, line 3:

~~The 3rd invention~~ Still another aspect of the present invention is an optical recording apparatus ~~according to 1st invention~~, wherein said aberration amount is substantially a spherical aberration amount and/or a coma aberration amount.

Specification at page 6, line 7:

~~The 4th invention~~ Yet still another aspect of the present invention is an optical recording apparatus ~~according to 3rd invention~~, wherein said detection means is capable of detecting the spherical aberration amount and the coma aberration amount, and outputs the spherical aberration amount as a spherical aberration detection signal  $S_1$  and outputs the coma aberration amount

as a coma aberration detection signal  $S_2$ , and wherein said control means controls the output of the light source so that, when the output of the light source necessary for the recording under a condition where  $S_1 = S_2 = 0$  is  $P_0$ , the output is  $P_0 / (1 - K \cdot (S^2 + S_2^2))$  for a predetermined constant  $K$ .

Specification at page 6, line 18:

~~The 5th invention~~ Still yet another aspect of the present invention is an optical recording apparatus ~~according to 3rd invention~~, wherein said information recording is performed on an optical disk, wherein said detection means detects and outputs a tilt amount of the optical disk as the signal associated with the aberration amount, and wherein the coma aberration amount is calculated based on a predetermined relationship that holds between the coma aberration amount and the tilt amount.

Specification at page 7, line 1:

~~The 6th invention~~ A further aspect of the present invention is an optical recording apparatus ~~according to 2nd invention~~, wherein said information recording is stopped when  $1 / (1 - K \cdot S^2) > 1.5$ .

Specification at page 7, line 4:

~~The 7th invention~~ A still further aspect of the present invention is an optical recording apparatus ~~according to 1st invention~~, wherein said detection means detects the detected aberration amount as an aberration detection signal  $S$ , and wherein when the aberration detection signal and the output of the light source obtained by initial learning in the recording are  $S_i$  and  $P_i$ , respectively, said control means controls the output of the light source so that the output is  $P_i(1 - K \cdot S_i^2) / (1 - K \cdot S^2)$  for a predetermined constant  $K$ .

Specification at page 7, line 13:

~~The 8th invention~~ A yet further aspect of the present invention is an optical recording method of controlling a light source for generating a light spot used for information recording, said method comprising:

Specification at page 7, line 22:

~~The 9th invention~~ A still yet further aspect of the present invention is a program for causing a computer to function as all or part of the control means of the optical recording apparatus ~~according to any one of 1st to 7th inventions.~~

Specification at page 8, line 1:

~~The 10th invention~~ An additional aspect of the present invention is a program for causing a computer to perform all or part of the control step of the optical recording method ~~according to 8th invention.~~

Specification at page 8, line 4:

~~The 11th invention~~ A still additional aspect of the present invention is a medium carrying a program for causing a computer to function as all or part of the control means of the optical recording apparatus ~~according to any one of 1st to 7th inventions,~~ said medium being computer-processable.

Specification at page 8, line 9:

~~The 12th invention~~ A yet additional aspect of the present invention is a medium carrying a program for causing a computer to perform all or part of the control step of the optical recording method ~~according to 8th invention,~~ said medium being computer-processable.